

Diameter range: .4528"-1.2600" (11.5mm-32.00mm)

<u>Head Series:</u> XSA-straight flute/blind hole XLB-LH flute/thru hole

<u>Shank series:</u> .625", .750", 1.25" cylindrical 16mm, 20mm, 32mm cylindrical

Length/Diameter ratio: 1.5 x D 3 x D 5 x D 8 x D



Member IMC Group

Cutting Tools





HIGH SPEED INDEXABLE REAMING SYSTEM



Indexable high speed reaming system known as QwikReam allows the ability to ream diameters ranging from .4528"-1.2600" (11.5mm-32.00mm) for both blind hole and thru hole applications. Coolant thru capabilities combined with multiple flute head design, allows for 30-40 times higher feed rates when compared to conventional reaming resulting in major reduction of cycle times.

QwikReam system consists of a 3 piece, patented indexing mechanism that includes a toolholder/shank, bayonet screw and replaceable reaming head. Heads can be indexed/replaced while still mounted in the machine or arbor resulting in virtually ZERO set up time and also reducing the risk of components being dropped or lost during indexing/replacing.

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OV/TKORE AND APPLICATION RANGE

The QwikReam system is designed for high speed reaming. In comparison to the conventional method, this advanced solution allows increasing the feeds dramatically (more than 30 times faster). This feature is most advantageous in mass production industries. When large quantities of workpieces are involved, the savings in machining time, labor cost and productivity are multiplied greatly.

The QwikReam system is more expensive when compared to a conventional reamer. However, due to its high productivity, shorter production time and elimination of setup time, the tool cost per part is significantly lower.

OVVIKORIE AVMI BORE TYPES



The QwikReam can be used for blind and through holes as well as for holes with cross holes or keyways. Moreover, they can be used for a very wide range of workpiece materials. Attached is a table with recommended machining data.

OVYIKORE AND ADVANTAGES

- High speed/high production.
- No setup time.
- Low runout (maximum 3µm).
- One shank can be used for a range of hole diameters and various types of cutting edges.
- Durable, due to the combination of a carbide head and steel shank.
- No fear of losing any clamping parts which may fall during indexing.
- Internal coolant directed optimally to the cutting edges.
- Possibility of applying Minimal Quantity Lubrication (MQL) systems.
- No need to remove the tool, due to the frontal indexing system.







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GUIDELINES FOR HIGH SPEED REAMING

As the cutting speed and feed are much higher than in conventional reaming, the following guidelines should be adhered to:

- The machine being used should be in good condition, meaning:
 - Very rigid, to minimize vibration and low runout
 - Equipped with an internal coolant spindle
- The reamers being used for high speed reaming are usually coated or made from PCD/CBN.
- Conventional reaming should be considered:
 - When the machine is not sufficiently rigid.
 - If only external cooling can be used.
 - In special applications such as thin walled tubes or when reaming soft materials (plastic, etc).
 - When there is a demand to use floating adapters (GFI).

GRADES

The reaming heads are available in IN2005 grade which is a submicron substrate, TiAIN PVD coated. IN2005 is Ingersoll's most versatile grade, covering a wide range of workpiece materials and machining conditions. IN2005 features very high fracture and wear resistance which is required for efficient high speed reaming. A special coating process of the TiAIN PVD coating ensures very accurate and uniform coating thickness keeping a sharp cutting edge.

The following grades can be provided on request:

- PCD grade for machining aluminum
- PCBN grade for machining cast iron
- Cermet



PCD tip for machining aluminum



Regrinding the QwikReam head is not recommended since the high performance and repeatability will be affected. It is recommended to consider the QwikReam head as an indexable "disposable" insert.

CANTRO RELAY

The standard QwikReam line will cover the range of .4528" - 1.2600" (11.500 - 32.000mm). There are 5 bayonet sizes with their corresponding bayonet screws and clamping keys covering this range.



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CANTER AND THE REAMER HEAD DESIGNATION CODE KEY

Straight Flute







XL - B - 19600 - R - 71 - IN2005

QwikReam Reamer Flute Type L = L.H. S = Straight Front End Configuration Code Hole Diameter .4528" - 1.2600" (11.500 - 32.000mm)

Right Hand Rotation

8 = H8 Tolerance 7 = H7 Tolerance

6 = H6 Tolerance

Deviation

Grade

QWIKREAM Range

DI	Ra	nge		XT Size
.4528"	-	.5315"	(11.500-13.500mm)	XT5
.5316"	÷	.6299"	(13.501-16.000mm)	XT6
.6300"	-	.7874"	(16.001-20.000mm)	XT7
.7875"	-	1.0000"	(20.001-25.400mm)	XT8
1.0001	" -	1.2600"	(25.401-32.000mm)	XT9

Head Options

Flute Type	Flute Angle α°	β°	γ°	а	Front End Code	π	Grade
Chucialat	0	45		.020"	*A	100	IN05S IN2005* PCD
Straight	0	45	8	.059"	C	117	
Left Hand	20	25	-	.042"	*B	- H/	
Leit-Hallu	20	30	4	.059"	D		CBN

* Standard

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Front End Configuration Code Key

Chamfer Type/Value	β°	γ°	а
Α	45	4	.020"
В	25	-	.042"
С	45	8	.059"
D	30	4	.059"

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ALLOWANCE & FLUTE GEOMETRY BY HOLE TYPE

Reaming allowance is the machining stock removed by reaming which varies depending on the workpiece material and pre-hole quality.

Pre-hole should have good surface & straightness to optimize the hole quality when reaming.

Hole Diameter	.4528"531"	.5311"6299"	.6300"-1.2600"
Steel	.004"008"	.004"012"	.004"012"
Cast Iron	.004"008"	.004"012"	.004"012"
Aluminium	.006"010"	.008"012"	.008"012"

Left-Handed Flute (Through Hole)



Chips are pushed forward immediately after formation







Straight Flute (Blind Hole)



Coolant flow helps chip evacuation by directing formed chips backward.



• Straight flute heads can be used for through hole application for short chipping materials. (e.g. cast iron)



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OVATKORE AND ASSEMBLY



First Assembly

- Clean the toolholder pocket (Fig. 1)
- Clean the reamer head clamping cone
- Insert the clamping screw into the holder and rotate it 2-3 turns in a clockwise direction (Fig. 2)
- Clamp the reaming head on the screw. Please note that it can be assembled only in a specific position relative to the screw (rotate the head until locating the correct position) (Fig. 3)
- Manually rotate the reaming head until it sits firmly in the pocket
- Tighten with the special key: 12-14 N·m (the toolholder should be clamped into an adapter) (Fig. 4)
- Make sure there is no face gap between the toolholder and the reaming head (Fig. 5)

Indexing

- Release the reaming head with the key, turning in a counter-clockwise direction until it rotates freely
- Rotate by hand another one turn
- Remove the reamer head from the tool. The clamping screw should remain inside!!!
- Clean the pocket of the toolholder (Fig. 1)
- Clean the cone on the reamer head
- Clamp the reaming head on the screw. Please note that it can be assembled only in one position relative to the screw (rotate the head until locating the correct position) (Fig. 3)
- Manually rotate the reaming head. In the beginning it should rotate without the screw and then (after 1/6 of a turn) it should engage with the screw. Rotate until it sits firmly in the pocket If the screw is rotating together with the reaming head from the beginning,
- remove the reaming head and open the screw another one turn
- Tighten with the special key: 12-14 N·m (the toolholder should be clamped into an adapter) (Fig. 4)
- Make sure that there is no face gap between the toolholder and the reaming head (Fig. 5)



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CANTER AND THE ADDA XLB LEFT-HAND FLUTE HEADS



Left-Hand Flute

XT D



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Designation	XT Connection	D (inch)	S (inch)	C (inch)	Flute Type	# of Flutes	Front End Code	Grade	
 XLB12700R71	XT5	0.5000	.366	.042	LH	6	В	IN2005	
XLB15875R71	XT6	0.6250	.370	.042	LH	6	В	IN2005	
XLB17462R71	XT7	0.6875	.417	.042	LH	6	В	IN2005	
XLB19050R71	XT7	0.7500	.417	.042	LH	6	В	IN2005	
XLB20637R71	XT8	0.8125	.504	.042	LH	8	В	IN2005	
XLB22225R71	XT8	0.8750	.504	.042	LH	8	В	IN2005	
XLB23812R71	XT8	0.9375	.504	.042	LH	8	В	IN2005	
XLB25400R71	XT8	1.0000	.504	.042	LH	8	В	IN2005	
XLB31750R71	XT9	1.2500	.504	.042	LH	8	В	IN2005	

Designation	XT Connection	D (mm)	S (mm)	C (mm)	Flute Type	# of Flutes	Front End Code	Grade
XLB11501R71	XT5	11.501	9.3	1.07	LH	6	В	IN2005
XLB12000R71	XT5	12.000	9.3	1.07	LH	6	В	IN2005
XLB13000R71	XT5	13.000	9.3	1.07	LH	6	В	IN2005
XLB13500R71	XT5	13.500	9.3	1.07	LH	6	В	IN2005
XLB13501R71	XT6	13.501	9.4	1.07	LH	6	В	IN2005
XLB14000R71	XT6	14.000	9.4	1.07	LH	6	В	IN2005
XLB15000R71	XT6	15.000	9.4	1.07	LH	6	В	IN2005
XLB16000R71	XT6	16.000	9.4	1.07	LH	6	В	IN2005
XLB16001R71	XT7	16.001	10.6	1.07	LH	6	В	IN2005
XLB17000R71	XT7	17.000	10.6	1.07	LH	6	В	IN2005
XLB18000R71	XT7	18.000	10.6	1.07	LH	6	В	IN2005
XLB19000R71	XT7	19.000	10.6	1.07	LH	6	В	IN2005
XLB20000R71	XT7	20.000	10.6	1.07	LH	6	В	IN2005
XLB20001R71	XT8	20.001	12.8	1.07	LH	8	В	IN2005
XLB21000R71	XT8	21.000	12.8	1.07	LH	8	В	IN2005
XLB22000R71	XT8	22.000	12.8	1.07	LH	8	В	IN2005
XLB23000R71	XT8	23.000	12.8	1.07	LH	8	В	IN2005
XLB24000R71	XT8	24.000	12.8	1.07	LH	8	В	IN2005
XLB25000R71	XT8	25.000	12.8	1.07	LH	8	В	IN2005
XLB26000R71	XT9	26.000	12.8	1.07	LH	8	В	IN2005
XLB27000R71	XT9	27.000	12.8	1.07	LH	8	В	IN2005
XLB28000R71	XT9	28.000	12.8	1.07	LH	8	В	IN2005
XLB29000R71	XT9	29.000	12.8	1.07	LH	8	В	IN2005
XLB30000R71	XT9	30.000	12.8	1.07	LH	8	В	IN2005
XLB31000R71	XT9	31.000	12.8	1.07	LH	8	В	IN2005
XLB32000R71	XT9	32.000	12.8	1.07	LH	8	В	IN2005



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CANTE AND XSA STRAIGHT FLUTE HEADS



Straight Flute





Designation	XT Connection	D (inch)	S (inch)	C (inch)	Flute Type	# of Flutes	Front End Code	Grade	
XSA12700R71	XT5	0.5000	0.366	0.020	ST	6	А	IN2005	
XSA15875R71	XT6	0.6250	0.370	0.020	ST	6	А	IN2005	
XSA17462R71	XT7	0.6875	0.417	0.020	ST	6	Α	IN2005	
XSA19050R71	XT7	0.7500	0.417	0.020	ST	6	А	IN2005	
XSA20637R71	XT8	0.8125	0.504	0.020	ST	8	Α	IN2005	
XSA22225R71	XT8	0.8750	0.504	0.020	ST	8	А	IN2005	
XSA23812R01	XT8	0.9375	0.504	0.020	ST	8	Α	IN2005	
XSA25400R71	XT8	1.0000	0.504	0.020	ST	8	Α	IN2005	
XSA31750R71	XT9	1.2500	0.504	0.020	ST	8	A	IN2005	

Designation	XT Connection	D (mm)	S (mm)	C (mm)	Flute Type	# of Flutes	Front End Code	Grade
XSA11501R71	XT5	11.501	9.3	0.5	ST	6	A	IN2005
XSA12000R71	XT5	12.000	9.3	0.5	ST	6	А	IN2005
XSA13000R71	XT5	13.000	9.3	0.5	ST	6	Α	IN2005
XSA13500R71	XT5	13.500	9.3	0.5	ST	6	А	IN2005
XSA13501R71	XT6	13.501	9.4	0.5	ST	6	Α	IN2005
XSA14000R71	XT6	14.000	9.4	0.5	ST	6	А	IN2005
XSA15000R71	XT6	15.000	9.4	0.5	ST	6	Α	IN2005
XSA16000R71	XT6	16.000	9.4	0.5	ST	6	Α	IN2005
XSA16001R71	XT7	16.001	10.6	0.5	ST	6	Α	IN2005
XSA17000R71	XT7	17.000	10.6	0.5	ST	6	Α	IN2005
XSA18000R71	XT7	18.000	10.6	0.5	ST	6	A	IN2005
XSA19000R71	XT7	19.000	10.6	0.5	ST	6	А	IN2005
XSA20000R71	XT7	20.000	10.6	0.5	ST	6	Α	IN2005
XSA20001R71	XT8	20.001	12.8	0.5	ST	8	А	IN2005
XSA21000R71	XT8	21.000	12.8	0.5	ST	8	Α	IN2005
XSA22000R71	XT8	22.000	12.8	0.5	ST	8	Α	IN2005
XSA23000R71	XT8	23.000	12.8	0.5	ST	8	Α	IN2005
XSA24000R71	XT8	24.000	12.8	0.5	ST	8	А	IN2005
XSA25000R71	XT8	25.000	12.8	0.5	ST	8	А	IN2005
XSA26000R71	XT9	26.000	12.8	0.5	ST	8	Α	IN2005
XSA27000R71	XT9	27.000	12.8	0.5	ST	8	А	IN2005
XSA28000R71	XT9	28.000	12.8	0.5	ST	8	А	IN2005
XSA29000R71	XT9	29.000	12.8	0.5	ST	8	Α	IN2005
XSA30000R71	XT9	30.000	12.8	0.5	ST	8	А	IN2005
XSA31000R71	XT9	31.000	12.8	0.5	ST	8	Α	IN2005
XSA32000R71	XT9	32.000	12.8	0.5	ST	8	А	IN2005



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OVALKOR AND HOLDERS





L/D Ratio	Designation	D inch(mm)	XT Connection	d (inch)	S (inch)	L (inch)	L1 (inch)	Shank Type	Shank Material
	XS5045117S6R01	.45285315 (11.500-13.500)	XT5	0.625	0.374	3.061	1.17	11/2/	
	XS6053132S6R01	.53166299 (13.501-16.000)	XT6	0.625	0.374	3.209	1.32		
1.5XD	XS7063160S7R01	.63007874 (16.001-20.000)	XT7	0.750	0.421	3.571	1.60	Cylindrical	Steel
	XS8079201S7R01	.7875-1.0000 (20.001-25.400)	XT8	0.750	0.508	3.976	2.01		
	XS9010240S9R01	1.0001-1.2600 (25.401-32.000)	XT9	1.250	0.508	4.760	2.40		
	XS5044133S6R01	.45285315 (11.500-13.500)	XT5	0.625	0.374	3.85	1.96		
	XS6053226S6R01	.53166299 (13.501-16.000)	XT6	0.625	0.374	4.15	2.26		
3XD	XS7063278S7R01	.63007874 (16.001-20.000)	XT7	0.750	0.421	4.75	2.78	Cylindrical	Steel
	XS8079331S7R01	.7875-1.0000 (20.001-25.400)	XT8	0.750	0.508	5.43	3.46		
	XS9250076S9R01	1.0001-1.2600 (25.401-32.000)	XT9	1.250	0.508	6.58	4.22		
	XS5044222S6R01	.45285315 (11.500-13.500)	XT5	0.625	0.374	4.92	3.03		
5XD	XS6053350S6R01	.53166299 (13.501-16.000)	XT6	0.625	0.374	5.41	3.52		
	XS7063433S7R01	.63007874 (16.001-20.000)	XT7	0.750	0.421	6.32	4.35	Cylindrical	Steel
	XS8079531S7R01	.7875-1.0000 (20.001-25.400)	XT8	0.750	0.508	7.39	5.43		
	XS9250127S9R01	1.0001-1.2600 (25.401-32.000)	XT9	1.250	0.508	9.10	6.74		
	XS5044355S6R01	.45285315 (11.500-13.500)	XT5	0.625	0.374	6.52	4.63		
8XD	XS6053540S6R01	.53166299 (13.501-16.000)	XT6	0.625	0.374	7.30	5.41		
	XS7063670S7R01	ХТ7	0.750	0.421	8.69	6.72	Cylindrical	Steel	
	XS8079841S7R01	.7875-1.0000 (20.001-25.400)	XT8	0.750	0.508	10.35	8.38		
	XS9250105S9R01	1.0001-1.2600 (25.401-32.000)	ХТ9	1.250	0.508	12.88	10.52		
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L/D Ratio	Designation	D mm(inch)	XT Connection	d (mm)	S (mm)	L (mm)	L1 (mm)	Shank Type	Shank Material
L/D Ratio	Designation XS5115030T3R01	D mm(inch) 11.500-13.500 (.45285315)	XT Connection XT5	d (mm) 16	S (mm) 9.50	L (mm) 77.8	L1 (mm) 29.8	Shank Type	Shank Material
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299)	XT Connection XT5 XT6	d (mm) 16 16	S (mm) 9.50 9.50	L (mm) 77.8 81.5	L1 (mm) 29.8 33.5	Shank Type	Shank Material
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874)	XT Connection XT5 XT6 XT7	d (mm) 16 16 20	S (mm) 9.50 9.50 10.7	L (mm) 77.8 81.5 90.7	L1 (mm) 29.8 33.5 40.7	Shank Type Cylindrical	Shank Material Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000)	XT Connection XT5 XT6 XT7 XT8	d (mm) 16 16 20 20	S (mm) 9.50 9.50 10.7 12.9	L (mm) 77.8 81.5 90.7 101.0	L1 (mm) 29.8 33.5 40.7 51.0	Shank Type Cylindrical	Shank Material Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600)	XT Connection XT5 XT6 XT7 XT8 XT9	d (mm) 16 16 20 20 32	S (mm) 9.50 9.50 10.7 12.9 12.9	L (mm) 77.8 81.5 90.7 101.0 120.9	L1 (mm) 29.8 33.5 40.7 51.0 60.9	Shank Type Cylindrical	Shank Material Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315)	XT Connection XT5 XT6 XT7 XT8 XT9 XT5	d (mm) 16 16 20 20 32 16	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8	Shank Type Cylindrical	Shank Material Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01 XS6135057T3R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299)	XT Connection XT5 XT6 XT7 XT8 XT7 XT8 XT9 XT5 XT6	d (mm) 16 16 20 20 32 32 16 16	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4	Shank Type Cylindrical	Shank Material Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01 XS6135057T3R01 XS7160070T4R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874)	XT Connection XT5 XT6 XT7 XT8 XT7 XT8 XT9 XT5 XT6 XT7	d (mm) 16 16 20 20 32 16 16 16 20	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50 9.50 10.7	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6	Shank Type Cylindrical	Shank Material Steel Steel
L/D Ratio 1.5XD 3XD	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01 XS6135057T3R01 XS7160070T4R01 XS8200084T4R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000)	XT Connection XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8	d (mm) 16 16 20 20 32 16 16 16 16 20 20	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50 9.50 10.7 12.9	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8	Shank Type Cylindrical	Shank Material Steel Steel
L/D Ratio 1.5XD 3XD	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01 XS6135057T3R01 XS7160070T4R01 XS8200084T4R01 XS9250107U7R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600)	XT Connection XT5 XT6 XT7 XT8 XT7 XT8 XT5 XT6 XT7 XT8 XT7 XT8 XT9	d (mm) 16 16 20 20 32 16 16 16 20 20 32	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50 10.7 12.9 12.9	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1	Shank Type Cylindrical	Shank Material Steel Steel
L/D Ratio 1.5XD 3XD	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01 XS5115057T3R01 XS7160070T4R01 XS8200084T4R01 XS9250107U7R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315)	XT Connection XT5 XT6 XT7 XT8 XT7 XT8 XT6 XT7 XT8 XT7 XT8 XT9 XT5	d (mm) 16 16 20 20 32 16 16 16 20 20 32 32 16	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50 10.7 12.9 12.9 9.50	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77	Shank Type Cylindrical	Shank Material Steel Steel
L/D Ratio 1.5XD 3XD	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01 XS5115057T3R01 XS7160070T4R01 XS8200084T4R01 XS9250107U7R01 XS5115077T3R01 XS6135089T3R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299)	XT Connection XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT7 XT8 XT7 XT8 XT9 XT8 XT9 XT5 XT5 XT5 XT5 XT5 XT5	d (mm) 16 16 20 20 32 16 16 20 20 32 32 16 16	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50 10.7 12.9 12.9 12.9 9.50 9.50	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125 137.4	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77 89.4	Shank Type Cylindrical	Shank Material Steel Steel
L/D Ratio 1.5XD 3XD	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS9254121T3R01 XS9254121T3R01 XS5115050T3R01 XS5115057T3R01 XS7160070T4R01 XS9250107U7R01 XS5115077T3R01 XS5115077T3R01 XS511507T3R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874)	XT Connection XT5 XT6 XT7 XT8 XT7 XT8 XT7 XT6 XT7 XT8 XT9 XT5 XT6 XT7	d (mm) 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20	S 9.50 9.50 10.7 12.9 12.9 9.50 9.50 9.50 9.50 9.50 9.50 9.50 9.50 9.50 10.7 12.9 12.9 9.50 9.50 9.50 9.50 9.50 10.7	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125 137.4 160.6	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77 89.4 110.6	Shank Type Cylindrical Cylindrical	Shank Material Steel Steel Steel
L/D Ratio 1.5XD 3XD 5XD	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS9254121T3R01 XS9254121T3R01 XS5115050T3R01 XS5115057T3R01 XS7160070T4R01 XS9250107U7R01 XS9250107U7R01 XS511507T3R01 XS511507T3R01 XS5160110T4R01 XS9260138T4R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000)	XT Connection XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT5 XT6 XT7 XT8	d (mm) 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 20	S (mm) 9.50 9.50 10.7 12.9 9.50 9.50 9.50 9.50 9.50 9.50 9.50 9.50 9.50 10.7 12.9 9.50 9.50 9.50 9.50 10.7 12.9 10.7 12.9	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125 137.4 160.6 187.8	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77 89.4 110.6 137.8	Shank Type Cylindrical Cylindrical	Shank Material Steel Steel Steel
L/D Ratio 1.5XD 3XD 5XD	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS9254121T3R01 XS9254121T3R01 XS5115050T3R01 XS5115057T3R01 XS7160070T4R01 XS9250107U7R01 XS5115077T3R01 XS5115077T3R01 XS5135089T3R01 XS7160110T4R01 XS8200138T4R01 XS9250171U7R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600)	XT Connection XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7	d (mm) 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50 9.50 10.7 12.9 9.50 10.7 12.9 9.50 10.7 12.9 9.50 10.7 12.9 9.50 10.7 12.9 12.9 9.50 10.7 12.9 12.9 12.9 12.9	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125 137.4 160.6 187.8 231.1	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77 89.4 110.6 137.8 171.1	Shank Type Cylindrical Cylindrical	Shank Material Steel Steel Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS9254121T3R01 XS9254121T3R01 XS5115050T3R01 XS5160070T4R01 XS9250107U7R01 XS5115077T3R01 XS5115077T3R01 XS5135089T3R01 XS7160110T4R01 XS925017U7R01 XS925017U7R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315)	XT Connection XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8	d (mm) 16 16 20 20 32 16 16 16 20 20 32 16 16 20 20 32 16	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50 10.7 12.9 9.50 10.7 12.9 12.9 12.9 12.9 12.9 12.9 9.50 9.50 9.50 10.7 12.9 12.9 12.9 9.50 9.50 9.50	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125 137.4 160.6 187.8 231.1 165.5	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77 89.4 110.6 137.8 171.1 117.5	Shank Type Cylindrical Cylindrical	Shank Material Steel Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01 XS5115050T3R01 XS7160070T4R01 XS8200084T4R01 XS9250107U7R01 XS5115077T3R01 XS5160110T4R01 XS8200138T4R01 XS9250171U7R01 XS5115117T3R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299)	XT Connection XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT8 XT7 XT5 XT6	d (mm) 16 16 20 20 32 16 16 20 20 32 16 16 20 20 32 16 16 16	S (mm) 9.50 9.50 10.7 12.9 12.9 9.50 9.50 10.7 12.9 9.50 10.7 12.9 9.50 10.7 12.9 9.50 9.50 9.50 9.50 9.50 10.7 12.9 9.50 9.50 9.50 9.50 9.50 9.50 9.50 9.50 9.50	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125 137.4 160.6 187.8 231.1 165.5 185.4	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77 89.4 110.6 137.8 171.1 117.5 137.4	Shank Type Cylindrical Cylindrical	Shank Material Steel Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS8200051T4R01 XS9254121T3R01 XS5115050T3R01 XS5115057T3R01 XS7160070T4R01 XS9250107U7R01 XS5115077T3R01 XS51160110T4R01 XS8200138T4R01 XS9250171U7R01 XS5115117T3R01 XS5115117T3R01 XS6135137T3R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874)	XT Connection XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7	d (mm) 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 16 20	S 9.50 9.50 10.7 12.9 12.7 9.50 9.50 9.50 9.50 9.50 9.50 10.7 12.9 9.50 9.50 9.50 10.7 12.9 9.50	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125 137.4 160.6 187.8 231.1 165.5 185.4 220.6	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77 89.4 110.6 137.8 171.1 117.5 137.4 170.6	Shank Type Cylindrical Cylindrical	Shank Material Steel Steel Steel
L/D Ratio	Designation XS5115030T3R01 XS6135034T3R01 XS7160041T4R01 XS9254121T3R01 XS9254121T3R01 XS5115050T3R01 XS5115057T3R01 XS7160070T4R01 XS9250107U7R01 XS511507T3R01 XS511507T3R01 XS7160110T4R01 XS9250171U7R01 XS9250171U7R01 XS9250171U7R01 XS9250171U7R01 XS9250171U7R01 XS925017117T3R01 XS6135137T3R01 XS7160171T4R01 XS9200213T4R01	D mm(inch) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000) 25.401-32.000 (1.0001-1.2600) 11.500-13.500 (.45285315) 13.501-16.000 (.53166299) 16.001-20.000 (.63007874) 20.001-25.400 (.7875-1.0000)	XT Connection XT5 XT6 XT7 XT8 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT9 XT5 XT6 XT7 XT8 XT7 XT8	d (mm) 16 16 20 20 32 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 20 20 20 32 16 16 20 20 20 32 16 16 20 20 20 32 16 16 20 20 20 32 16 16 20 20 20 32 16 16 20 20 20 32 16 16 20 20 20 32 16 16 20 20 20 32 16 16 16 20 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 16 20 20 32 16 16 20 20 32 20 20 32 20 20 20 20 20 20 20 20 20 2	S (mm) 9.50 9.50 9.50 10.7 12.9 9.50 9.50 9.50 10.7 12.9 12.9 9.50 9.50 9.50 10.7 12.9 9.50 9.50 9.50 9.50 10.7 12.9 9.50 9.50 9.50 9.50 9.50 9.50 9.50 9.50 10.7 12.9 9.50 10.7 12.9 9.50 9.50 10.7 12.9 9.50 9.50 10.7 12.9 9.50	L (mm) 77.8 81.5 90.7 101.0 120.9 97.8 105.4 120.6 137.8 167.1 125 137.4 160.6 187.8 231.1 165.5 185.4 220.6 262.8	L1 (mm) 29.8 33.5 40.7 51.0 60.9 49.8 57.4 70.6 87.8 107.1 77 89.4 110.6 137.8 171.1 117.5 137.4 170.6 212.8	Shank Type Cylindrical Cylindrical Cylindrical Cylindrical	Shank Material Steel Steel Steel



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Designation	XT Connection	
TM-B5-KEY	XT5	
ТМ-В6-КЕҮ	XT6	
ТМ-В7-КЕУ	XT7	
ТМ-В8-КЕҮ	XT8	
ТМ-В9-КЕУ	XT9	

BAYONET SCREW



Designation	XT Connection	м
TM-B5-SCR	XT5	M5
TM-B6-SCR	XT6	М6
TM-B7-SCR	XT7	M7
TM-B8-SCR	XT8	M8
TM-B9-SCR	XT9	М9



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CANTROP CONDITIONS

ISO	Material	Condition	Material No. ⁽¹⁾	Thro	ugh Hole	Interrupted	d Through Hole	Bli	nd Hole	Interrupt	ed Blind Hole
		Annealed	1	IN2005	LB	IN2005	LB	IN2005	SA	IN2005	SA
	New Allowed Accel	Annealed	2	Vc =	260 - 660	Vc =	200 - 390	Vc =	200 - 530	Vc =	200 - 390
	cast steel, free	Quenched & tempered	3								
	cutting steel	Annealed	4	XT5 - XT6	fz = .003008	XT5 - XT6	fz = .002007	XT5 - XT6	fz = .002007	XT5 - XT6	fz = .002006
		Annealed	4								· · · · · · · · · · · · · · · · · · ·
		Quenched & tempered	5	X17 - X19	tz = .005011	X17 - X19	tz = .004008	X17 - X19	tz = .003008	X17 - X19	tz = .003006
П	Low alloyed steel,	Annealed	6	IN2005		IN2005		IN2005	SA	IN2005	SA
P	cast steel (lees		1	Vc =	260 - 660	Vc =	200 - 390	Vc =	200-530	Vc =	200 - 390
	than 5% alloying	Quenched & tempered	8	XT5 - XT6	fz = .003008	XT5 - XT6	fz = .002007	XT5 - XT6	fz = .002007	XT5 - XT6	tz = .002006
	elements)		9	XT7 - XT9	tz = .005011	XT7 - XT9	tz = .004008	XT7 - XT9	tz = .003008	XT7 - XT9	tz = .003006
		Annoalad	10	IN2005	LB	IN2005	LB	IN2005	SA	IN2005	SA
	High alloyed steel,	Aimealeu	10	Vc =	=65 - 200	Vc =	65 - 200	Vc =	65 - 200	Vc =	65 - 200
	steel	Quanchad & tompored	11	XT5 - XT6	fz = .002005	XT5 - XT6	fz = .002004	XT5 - XT6	fz = .002 · .004	XT5 - XT6	fz = .001003
		Quencheu & tempereu		XT7 - XT9	fz = .003007	XT7 - XT9	fz = .002006	XT7 - XT9	fz = .002005	XT7 - XT9	fz = .002004
		Ferritic / martensitic	12	IN2005	LB	IN2005	LB	IN2005	SA	IN2005	SA
54	Stainless steel,	Territic / martensitic	12	Vc =	65 - 130	Vc =	65 - 130	Vc =	65 - 130	Vc =	65 - 130
IVI	cast steel	Martensitic	13	XT5 - XT6	fz = .002005	XT5 - XT6	fz = .002004	XT5 - XT6	fz = .002004	XT5 - XT6	fz = .001003
		Austentic	14	XT7 - XT9	fz = .003007	XT7 - XT9	fz = .002006	XT7 - XT9	fz = .002005	XT7 - XT9	fz = .002004
		Forritic	15	IN2005	LB	IN2005	LB	IN2005	SA	IN2005	SA
	Grey iron	remut	15	Vc =	390 - 720	Vc =	260 - 660	Vc =	260 - 660	Vc =	200 - 390
	(GG)	Pearlitic	16	XT5 - XT6	fz = .003007	XT5 - XT6	fz = .002005	XT5 - XT6	fz = .002007	XT5 - XT6	fz = .002005
		reamine	10	XT7 - XT9	fz = .004009	XT7 - XT9	fz = .003007	XT7 - XT9	fz = .003009	XT7 - XT9	fz = .003007
		Poprlitic / forritic	17	IN2005	SA or LB	IN2005	LB	IN2005	SA	IN2005	SA
K	Nodular iron	reamac/ ternac		Vc =	530 - 920	Vc =	490 - 820	Vc =	530 - 920	Vc =	530 - 790
N	(GGG)	Pearlitic / martensitic	18	XT5 - XT6	fz = .004008	XT5 - XT6	fz = .002006	XT5 - XT6	fz = .002007	XT5 - XT6	fz = .002006
		rearrier martensite		XT7 - XT9	fz = .004009	XT7 - XT9	fz = .003007	XT7 - XT9	fz = .003009	XT7 - XT9	fz = .003007
	Mallaabla iran	Ferritic	19	IN2005	SA or LB	IN2005	LB	IN2005	SA	IN2005	SA
	Nodular iron ferritic			Vc =	330 - 720	Vc = 3	330 - 720	Vc =	330 - 720	Vc =	330 - 720
	/ pearlitic	Pearlitic	20	XT5 - XT6	fz = .004008	XT5 - XT6	fz = .002006	XT5 - XT6	fz = .002007	XT5 - XT6	fz = .002006
				XT7 - XT9	tz = .004009	XT7 - XT9	tz = .003008	XT7 - XT9	tz = .003009	XT7 - XT9	fz = .003008
	Aluminum wrought	Not cureable	21	RN01	LB or SG	RN01	LB	RN01	SG or SA	RN01	SG or SA
	alloy	Cured	22	Vc =	190.1310	$V_{c} = A$	190 . 1150	Vc = /	Vc = 490 - 1310		490 - 980
	.	Not cureable	23	vc - 1	470 - 1310	VC = 490 - 1150		VC = 490 - 1510		VC = 490 - 980	
	Aluminum - cast, alloved	Cured	24	XT5 - XT6	fz = .003006	XT5 - XT6	fz = .003006	XT5 - XT6	fz = .003006	XT5 - XT6	fz = .003006
	anoyeu	High temperature	25	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008
				IC30N	SA or SG	IC08	SG or SA	IC30N	SG or SA	IC08	SG or SA
Ν	Copper alloys	Free cutting	26	Vc =	590 - 790	Vc =	100 - 330	Vc =	590 - 790	Vc =	100 - 330
	Brass , bronzes	Brass	27	XT5 - XT6	fz = .002006	XT5 - XT6	fz = .002005	XT5 - XT6	fz = .002006	XT5 - XT6	fz = .002005
		Electrolitic copper	28	XT7 - XT9	fz = .003008	XT7 - XT9	fz = .002006	XT7 - XT9	fz = .003008	XT7 - XT9	fz = .002006
		Duranlaatise fiker aleetise	20	IN2005	SA	IN2005	SA	IN2005	SA	IN2005	SA
	No	Duropiastics, inder plastics	27	Vc =	: 80 - 260	Vc =	80 - 260	Vc =	80 - 260	Vc =	80 - 260
	Non-metallic	Hand with har	20	XT5 - XT6	fz = .002004	XT5 - XT6	fz = .002004	XT5 - XT6	fz = .002005	XT5 - XT6	fz = .002004
		Hard rubber	30	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008
		Annealed	31	IN2005	L*	IN2005	L*	IN2005	S*	IN2005	S*
		Cured	32	Ve-	50 140	Ve-	E0 140	Ve -	E0 140	Ve -	50 140
	* High temperature	Annealed	33	VC -	. 50 - 100	vc-	50-100	VC -	50-100	vi –	50-100
_	alloys	Cured	34								
2		Cast	35	XT5 - XT6	fz = .002004	XT5 - XT6	fz = .001003	XT5 - XT6	fz = .001003	XT5 - XT6	fz = .001003
	Titanium Ti allour		36	X17 X10	fz = 002 005	X17 X10	fz = 002 004	X17 . YTO	$f_7 = 0.02 + 0.04$	XT7 YT0	$f_7 = 0.02 + 0.04$
	intanium, ir anoys	Alpha+Beta alloys cured	37	X17 • X17	12002 * .003	X17 • X17	12002 * .004	X17 · X17	12002 * .004	X17 · X17	12002 * .004
		Hardened	38	IN2005	LB	IN2005	LB	IN2005	SA	IN2005	SA
μ	Hardened steel	Hardened	39	Vc =	80 - 160	Vc =	80 - 160	Vc =	80 - 160	Vc =	80 - 160
п	fiandenieù steef	Cast	40	XT5 - XT6	fz = .002005	XT5 - XT6	fz = .002006	XT5 - XT6	fz = .002005	XT5 - XT6	fz = .002005
		Hardened	41	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008	XT7 - XT9	fz = .004008

Legend:

Standard edge geometries are not suitable for reaming titanium and high temperature alloys. In order to choose a proper geometry, please ask for our recommendations.
The given cutting data recommendations refer to short holders (3xD effective reaming overhang). For longer holders, the cutting speed must be reduced proportionally.
For relatively large leading angles (spot-facing geometries), the feed must be reduced up to 30%.
All the given cutting data recommendations refer to machines with spindle through coolant supply.

Grade	\rightarrow	IN2005	BL	
Cutting Speed [sfpm]	~	Vc = 100 - 200		- Front End Configuratio
		XT5-XT6	fz = 0.001 · 0.006	Feed [inch/tooth]
Head Size	1	XT7-XT9	fz = 0.002 - 0.008	recu [meintooni]

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